

Work Order ID 90046

90046

U/R

September-13-12 10:09:15 AM

Item ID: D350-748-101

Accept

N900040100

Setup Start *NS1*

Revision ID: U/R

Stop *NS2*

Item Name: Crosstube Installation, High Fwd

Start Date: 9/13/12 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 10/19/12 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12-09-14 Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D350-748-141	F U/R OK <u>9/12.9.18</u>								
100		0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Document Control	Photocopy bluefile & type labels per PPPD350-748-101		CHG002						
110		0.00							
110	BENDING MACHINE - CROSSTUBES								
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT _____								
	****UNDER BEND .225" PER SIDE****								
	****USE (4) DT9824 SHIM BLOC TO CHECK STRAIGHTNESS****								

DP
12-12-18

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY			
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Work Order ID 90046

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September-13-12 10:09:15 AM

Item ID: D350-748-101

Accept

N900040100

Setup Start *NS1*

Revision ID: U/R

Stop *NS2*

Item Name: Crosstube Installation, High Fwd

Start Date: 9/13/12 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 10/19/12 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC15- Crosstube Dimensional Check Memo ****USE (4) DT9824 SHIM BLOC TO CHECK STRAIGHTNESS****	0.00 0.00							

125 *125* HandFXtube Hand Finishing Crosstubes	Memo ***Stress relief*** Heat treat crosstube as per QSI010 4.3 Temp: _____ Start time: _____ Finish time: _____ Rev	0.00 0.00							
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127 *127* QC Quality Control	QC26- Inspect dimensions to drawing Memo	0.00 0.00							
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Review -> Inspect

Sp 12-12-31.

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data	12/9/18	125	1	STRESS RELIEF @ 650 F ± 25 F FOR 2 HRS MIN. AIR COOL TO AMBIENT TEMP.	DAS 12 9-89 12.9.18	N/A					
Equip/Tooling											
Operator											
Material											
Setup											
Other	12/19/18	124	1	PRIOR TO STRESS RELIEF, DRILL Ø0.188 THRU HOLE, 2.00" FROM END OF CUFF. Qty(1) per cuff.	DAS 12 9-89 12.9.18	TOOLING HOLE FOR STRESS RELIEF.					
Process											
Supplier											
Training											
Unapproved											

FAULT CATEGORY				
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

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September-13-12 10:09:15 AM

Item ID: D350-748-101 Accept *N900040100* Setup Start *NS1*
 Revision ID: U/R Stop *NS2*
 Item Name: Crosstube Installation, High Fwd
 Start Date: 9/13/12 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 10/19/12 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Crosstubes	Crosstubes	0.00							
Crosstubes	Memo	0.00							
	1-Drill Tube as per Dwg D350-748-141 Using DT8876 A,B &C Drill Jigs, Set-up drill table as per QSI 010								
	2-Deburr								
	3-Engrave Part # and Batch # as per Dwg D350-748-141								
	4-Remove all marks from tube within limits of D350-748-141								
	5- Apply a light coat of LPS3 on the interior of tube Batch: <u>1148</u>								
140 *140* QC	QC5- Inspect part completeness to step on W/O	0.00							
Quality Control	Memo	0.00							
	CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)								

JW 12-12-31
 MO 13/01/03

DAS 15
 DAS 16
 13-1-3
 13/1/3

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											
FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other		

Work Order ID 90046

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Page 4

September-13-12 10:09:15 AM

Item ID: D350-748-101

Accept

N900040100

Setup Start *NS1*

Revision ID: U/R

Stop *NS2*

Item Name: Crosstube Installation, High Fwd

Start Date: 9/13/12 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 10/19/12 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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150

Outsource process-Cadplate per QSI017 4.1.9.1

0.00

150

Outsource3

Outsource process - Cad plate

Memo

Issue P/O: 1865T
Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possible Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

0.00

18743

CL13/01/07 ①

19086 CL13/02/12 ①

CL12/12/19 ①

160

Receive & Inspect for Damage & Mat'l Certs

0.00

160

Packaging

Packaging

Memo

Ensure certificate of conformity is attached

0.00

CL12/20 ①

170

QC5- Inspect part completeness to step on W/O

0.00

170

QC

Quality Control

Memo

0.00

Pho →

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector	
Doc/Data	<input type="checkbox"/>				<i>Crack Found During end piston about From cuff.</i>		<i>Grind out / Blend out crack / mark.</i>				
Equip/Tooling	<input type="checkbox"/>						<i>ultra sound Area of crack + record wall thickness.</i>				
Operator	<input type="checkbox"/>										
Material	<input type="checkbox"/>										
Setup	<input type="checkbox"/>										
Other	<input type="checkbox"/>										
Process	<input type="checkbox"/>										
Supplier	<input type="checkbox"/>										
Training	<input type="checkbox"/>										
Unapproved	<input type="checkbox"/>										

FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Work Order ID 90046

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Page 5

September-13-12 10:09:15 AM

Item ID: D350-748-101

Accept

N900040100

Setup Start *NS1*

Revision ID: U/R

Stop *NS2*

Item Name: Crosstube Installation, High Fwd

Start Date: 9/13/12 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 10/19/12 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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172

0.00

172

Crosstubes

Memo

0.00

Crosstubes

LOAD TEST TO 3500LB FOR 1 MINUTE

174

Outsource process - NDT per QSI038 4.1

0.00

174

Outsource2

Memo

0.00

Outsource process - NDT

176

Receive & Inspect for Damage & Mat'l Certs

0.00

176

Packaging

Memo

0.00

Packaging

~~CL 13/02/26~~
~~PID: 19183W/A~~

X1

IX

SP
13-2-26

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY											
Landing Gear			General			Grain			Other		
<input type="checkbox"/>	Bending	<input type="checkbox"/>	Bend	<input type="checkbox"/>	Grain	<input type="checkbox"/>	Ovalized	<input type="checkbox"/>	Pressure/Forced		
<input type="checkbox"/>	Centre Not Concentric to O/S	<input type="checkbox"/>	BOM/Route	<input type="checkbox"/>	Hardware	<input type="checkbox"/>	Over/Under tolerance	<input type="checkbox"/>	Temperature/Cure		
<input type="checkbox"/>	Cracks	<input type="checkbox"/>	Broken/Damaged	<input type="checkbox"/>	Inspection Incomplete	<input type="checkbox"/>	Part Incorrect	<input type="checkbox"/>	Weld		
<input type="checkbox"/>	Crushed/Crimped	<input type="checkbox"/>	Burrs	<input type="checkbox"/>	Instructions Incomplete/Unclear	<input type="checkbox"/>	Part Lost/Missing	<input type="checkbox"/>	Wrong Stock Pulled		
<input type="checkbox"/>	Cuffs	<input type="checkbox"/>	Contamination	<input type="checkbox"/>	Maintenance	<input type="checkbox"/>	Part Moved	<input type="checkbox"/>			
<input type="checkbox"/>	Heat Treat	<input type="checkbox"/>	Countersink	<input type="checkbox"/>	Mislabeled	<input type="checkbox"/>	Positioned Wrong	<input type="checkbox"/>	Other		
<input type="checkbox"/>	Inspection Strip in Tube	<input type="checkbox"/>	Cut Too Short	<input type="checkbox"/>	Misread	<input type="checkbox"/>	Power Loss/Surge				
<input type="checkbox"/>	Ripples in Bend	<input type="checkbox"/>	Drill Holes	<input type="checkbox"/>	Offset						
<input type="checkbox"/>	Torque Waves in Extrusion	<input type="checkbox"/>	Drawing	<input type="checkbox"/>	Out of Calibration						
<input type="checkbox"/>	Turning Sequence	<input type="checkbox"/>	Finish	<input type="checkbox"/>	Out of Sequence						
<input type="checkbox"/>	Wave/Twist in Tube	<input type="checkbox"/>	Folio	<input type="checkbox"/>	Outside Dimensions						

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September-13-12 10:09:15 AM

Item ID: D350-748-101

Accept

N900040100Setup Start ***NS1***

Revision ID: U/R

Stop ***NS2***

Item Name: Crosstube Installation, High Fwd

Start Date: 9/13/12 Start Qty: 1.00

1

Cust Item ID:

Required Date: 10/19/12 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
178	QC5- Inspect part completeness to step on W/O	0.00							
178									
QC	Memo	0.00							
Quality Control									
180	SprayPaint	0.00							
180									
SprayPaint	Memo	0.00							
Spray Painting	1-Prime inside crosstube as per QSI 005 4.2 2-Prime Outside of Tube as per Dart QSI 005 4.2								
190	QC14- Inspect Spray Paint	0.00							
190									
QC	Memo	0.00							
Quality Control	Then, Wrap in plastic bag to protect from scratches								

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

90046

September-13-12 10:09:15 AM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 9/13/12 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 10/19/12 **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

200

200

Crosstubes

Crosstubes

Crosstubes

Memo

1-Install Ground wire Insert,then insert screw and washer

2-Install Abrasion strips as per Dwg D350-748-141 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-141,Torque to 60-80 IN-LBS

0.00

0.00

0.00

0.00

0.00

0.00

210

210

OC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

220

220

Packaging

Packaging

Pick Kit

Memo

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>						
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector			
Doc/Data <input type="checkbox"/>												
Equip/Tooling <input type="checkbox"/>												
Operator <input type="checkbox"/>												
Material <input type="checkbox"/>												
Setup <input type="checkbox"/>												
Other <input type="checkbox"/>												
Process <input type="checkbox"/>												
Supplier <input type="checkbox"/>												
Training <input type="checkbox"/>												
Unapproved <input type="checkbox"/>												
FAULT CATEGORY												
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

90046

September-13-12 10:09:15 AM

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Item Name: Crosstube Installation, High Fwd

Start Date: 9/13/12 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 10/19/12 **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

230

QC4- 100% Inspect kits for completeness

0.00

230

QC

Memo

0.00

Quality Control

240

0.00

240

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D350-748-101

Location:

PPP Rev:

250

QC21- Final Inspection - Work Order Release

0.00

250

QC

Memo

0.00

Quality Control

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>						
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Doc/Data <input type="checkbox"/>												
Equip/Tooling <input type="checkbox"/>												
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Setup <input type="checkbox"/>												
Other <input type="checkbox"/>												
Process <input type="checkbox"/>												
Supplier <input type="checkbox"/>												
Training <input type="checkbox"/>												
Unapproved <input type="checkbox"/>												
FAULT CATEGORY												
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

Picklist Print

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Page 1

Work Order ID: 90046

Parent Item: D350-748-101

Start Date: 9/13/12

Required Date: 10/19/12

Parent Item Name: Crosstube Installation, High Fwd

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 06-07-05 JLM
 IPP Rev:B Update qty of MS21042L5 06-09-12 KJ VERIFY BY:DD
 IPP Rev:C Rev B 07-11-15 DD
 IPP Rev D Combined manufacturing 08.04.02 EC verified by: DD
 IPP Rev:E 08-06-24 revD as per dwg DD verified by:EC IPP Rev:F 10.08.04 added QSI010
 4.3 DD verf:EC
 IPP REV:G ADD UNDER BEND COMMENT 12-05-28 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS4-1032-225 Insert		Purchased	No			200	Each	2,785.0000	1	1			

Location	Loc Qty	Loc Code
FP-B	1346	
122290	1346	
ST281	1416	
108696	146	
110768	62	
118386	55	
118966	68	
121269	85	
122827	1000	
ST282	23	
120410	10	
120451	13	

AN4-41A Bolt		Purchased	No			220	Each	403.0000	8	8			
-----------------	--	-----------	----	--	--	-----	------	----------	---	---	--	--	--

Location	Loc Qty	Loc Code
360	181	
121185	181	
ST360	222	
115108	3	
115705	1	
119328	68	
120423	150	

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											
FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other		

Picklist Print

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Page 2

Work Order ID: 90046

Parent Item: D350-748-101

Start Date: 9/13/12

Required Date: 10/19/12

Parent Item Name: Crosstube Installation, High Fwd

Start Qty: 1.00

Required Qty: 1.00

AN4-6A	Purchased	No	220	Each	1,313.0000	16	16
Bolt							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST355	800	
122808	600	
123021	200	
ST356	513	
121243	500	
122151	13	

AN5-32A	Purchased	No	220	Each	337.0000	4	4
Bolt							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST337	100	
122416	50	
122800	50	
ST338	50	
122993	50	
ST339	93	
122151	93	
ST340	94	
121541	94	

AN960JD10	NAS1149D0363J	Purchased	No	200	Each	0.0000	1	1
-----------	---------------	-----------	----	-----	------	--------	---	---

Washer

AN960JD416	NAS1149D0463J	Purchased	No	220	Each	29.0000	32	32
------------	---------------	-----------	----	-----	------	---------	----	----

Washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST351	29	
116289	8	
119097	21	

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Page 2

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>						
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector			
Doc/Data <input type="checkbox"/>												
Equip/Tooling <input type="checkbox"/>												
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Setup <input type="checkbox"/>												
Other <input type="checkbox"/>												
Process <input type="checkbox"/>												
Supplier <input type="checkbox"/>												
Training <input type="checkbox"/>												
Unapproved <input type="checkbox"/>												
FAULT CATEGORY												
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

Picklist Print

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Page 3

Work Order ID: 90046

Parent Item: D350-748-101

Start Date: 9/13/12

Required Date: 10/19/12

Parent Item Name: Crosstube Installation, High Fwd

Start Qty: 1.00

Required Qty: 1.00

AN960JD516 NAS1149D0563J Purchased No
Washer

220 Each 2.0000 8 8

Location Loc Qty Loc Code

ST338 2

1069059 2

D2856-400 Manufactured No
Abrasion Strip

200 f 328.9994 1.181 1.2431579

Location Loc Qty Loc Code

ST403 224.798

81875 8.798

89352 216

ST409 104.2014

63735 0.6696

68076 0.3149

71164 8.46

86905 94.7569

D3500-1 Manufactured No
Saddle

220 Each 47.0000 4 4

Location Loc Qty Loc Code

ST423 40

85421 40

ST425 7

76940 7

D3501-1 Manufactured No
Bushing

220 Each 215.0000 16 16

Location Loc Qty Loc Code

ST051 215

67757 4

73391 6

74866 205

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Shop Packet Print

Page 3

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											
FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other		

Picklist Print

September-13-12 10:09:14 AM

Page 4

Work Order ID: 90046

Parent Item: D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 9/13/12

Required Date: 10/19/12

Start Qty: 1.00

Required Qty: 1.00

D3502-1
Support

Manufactured No

200 Each 45.0000 2 2

Location	Loc Qty	Loc Code
LG050	35	
77041	35	
ST051	10	
73419	9	
74873	1	

D350-748-141TRN
Crosstube Turning Detail

Manufactured No

110 Each 2.0000 1 1

Location	Loc Qty	Loc Code
LG	2	
83277	1	
83278	1	

SAD 12-12-18
① FW 12-12-04
①

MS21042L4
Nut

Purchased No

220 Each 6,412.0000 24 24

Location	Loc Qty	Loc Code
314	3377	
122452	3377	
FP001	22	
8182	22	
ST300	13	
121444	13	
ST314	3000	
123021	3000	

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Shop Packet Print

Page 4

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

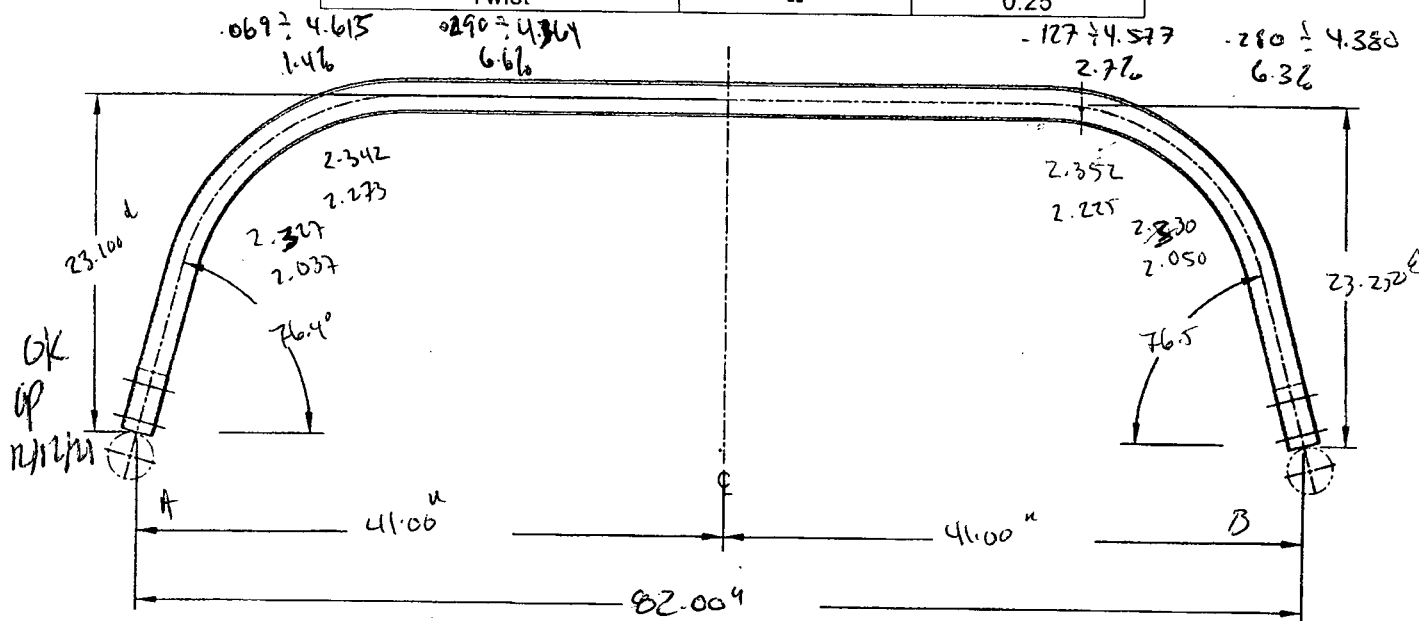
QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
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Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY				
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

DART AEROSPACE LTD		Work Order:	90046
Description: Crosstube High Fwd (AS350/355)		Part Number:	D350-748-101
Inspection Dwg: D350-748-141	Rev: F	Page 1 of 1	

Required Dimension	Min	Max
Height	23.12	23.38
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.55	82.05
Bending Passes	7	--
Crushing	--	6%
Twist	--	0.25



	Side A	Side B
Bending Passes		
Crushing		
Comments		
twist = 0.234		
Side A crushing	= 1.46 @ top	6.62 @ Bottom
Side B crushing	= 2.77 @ top	6.32 @ Bottom

QC15 Inspection	DAS
Date	12/12/21

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	11.11.07	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing & twist dimensions	KJ	OK

Item	Qty -141	Part Number	Description
1	X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
2	1	D6015-125	CROSSTUBE (OR D6017-115)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6017-115
FINISHED LENGTH = 110.270±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER 'D350-748-141' AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER
NO. 90046-MLJ
12-09-14

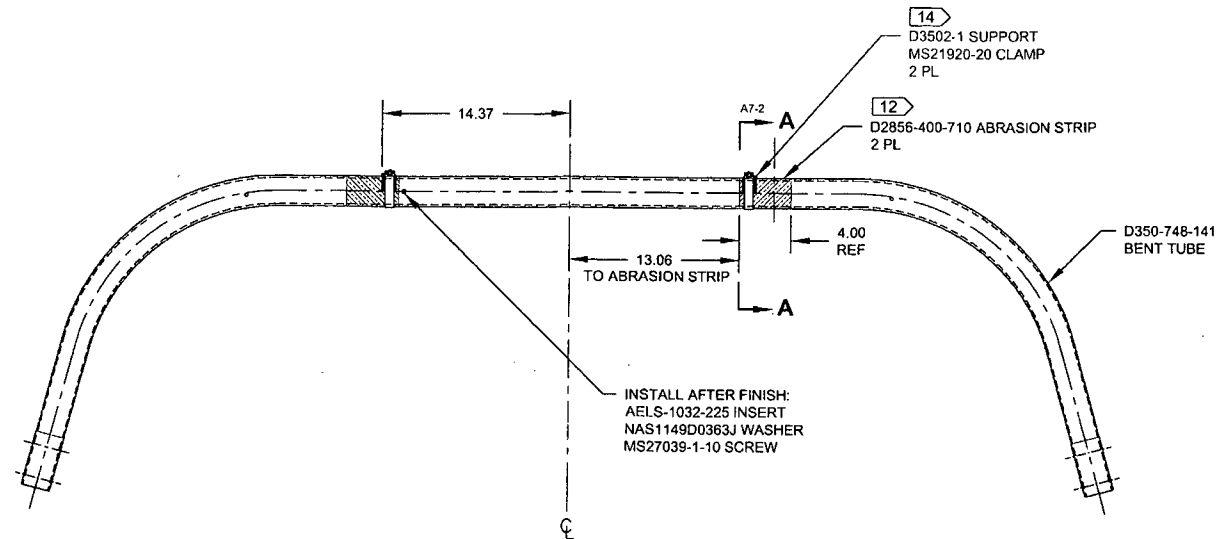
UNDER REVIEW

RELEASED
2011-01-18

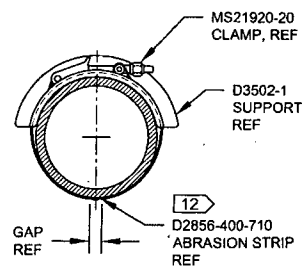
F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT ADD STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A6-3); TOLERANCES (ZN C6-3, D1-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6017-115 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.11.23		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D350-748-141	REV. F SHEET 1 OF 4
TITLE CROSSTUBE (AS 350/355 HI FWD)	SCALE NTS
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90046



**D350-748-141
ASSEMBLY DETAIL**



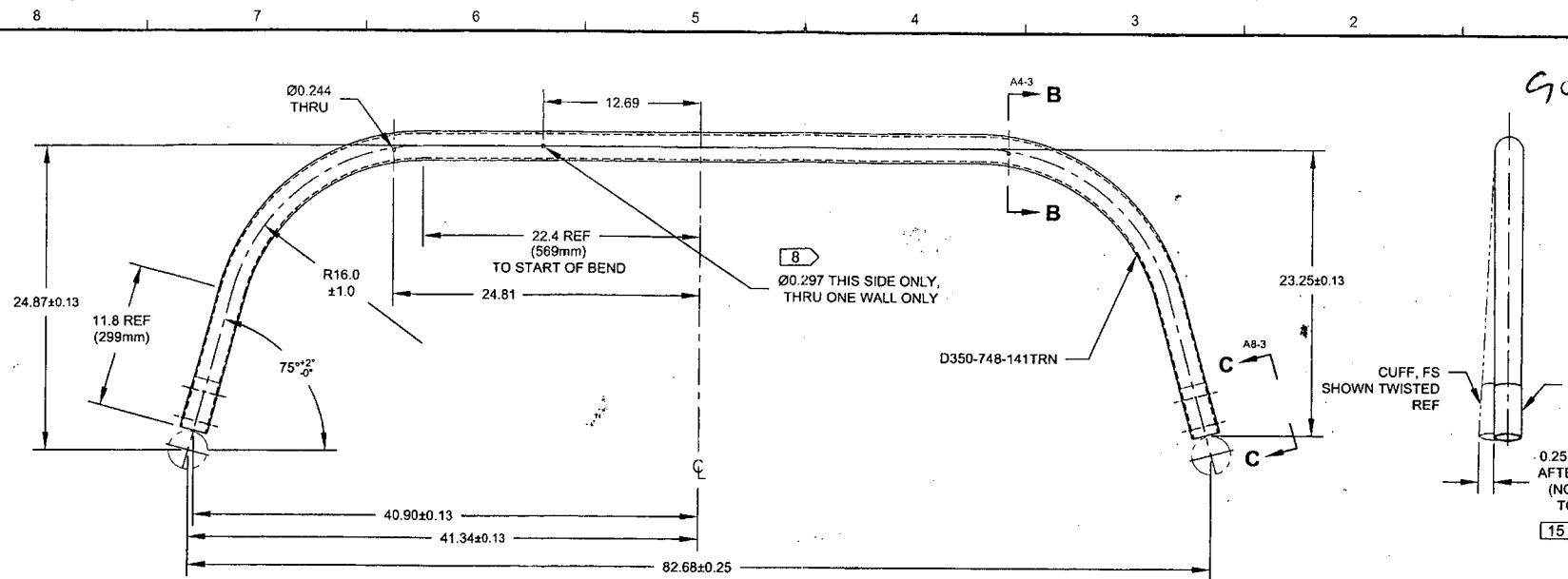
SECTION A-A D4-2
SCALE 4X

UNDER REVIEW

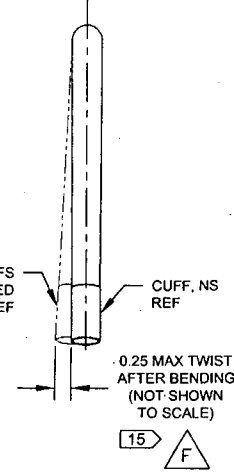
11.07.11

RELEASED
2011-01-18

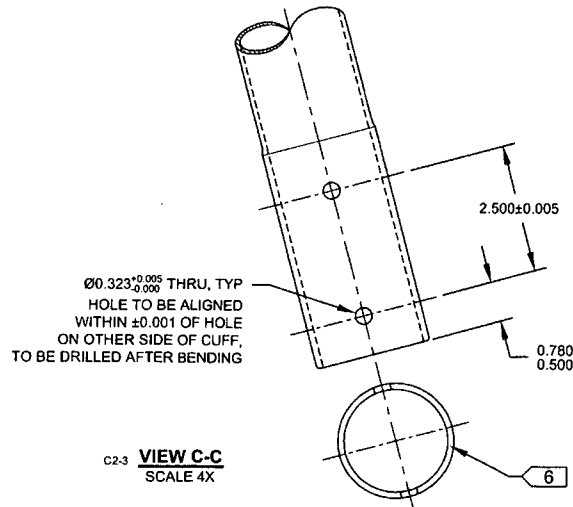
DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D350-748-141	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	<small>COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	



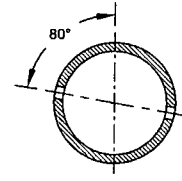
90046



D350-748-141
BENDING AND DRILLING DETAIL 10



VIEW C-C
SCALE 4X



SECTION B-B D3-3
SCALE 4X

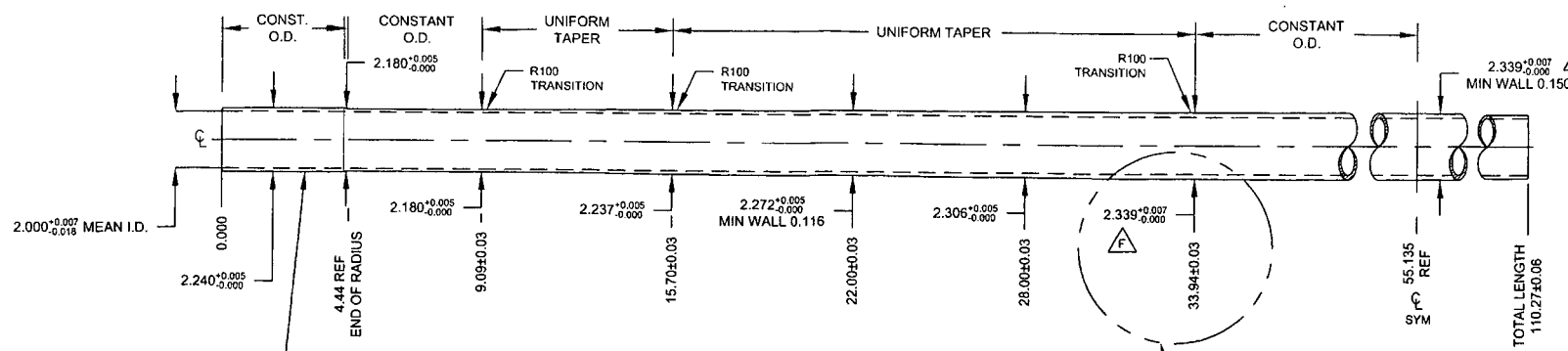
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11.27.12

RELEASED
2011-01-18

DESIGN	90	DART AEROSPACE LTD	
DRAWN	90	HAWKESBURY, ONTARIO, CANADA	
CHECKED	3	DRAWING NO.	REV. F
MFG. APPR.	3	D350-748-141	SHEET 3 OF 4
APPROVED	3	TITLE	SCALE
DE APPR.	3	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	<small>COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1

90046



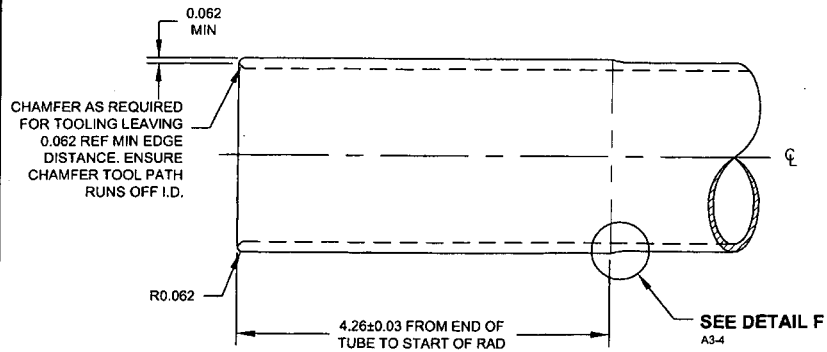
SEE DETAIL D
A6-4

SEE DETAIL E
A1-4

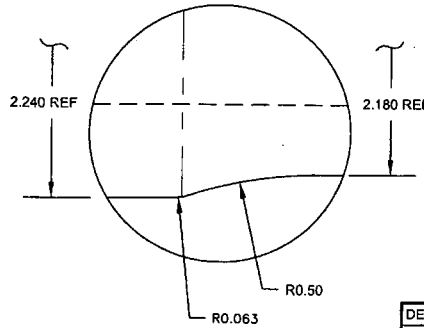
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11.07.12

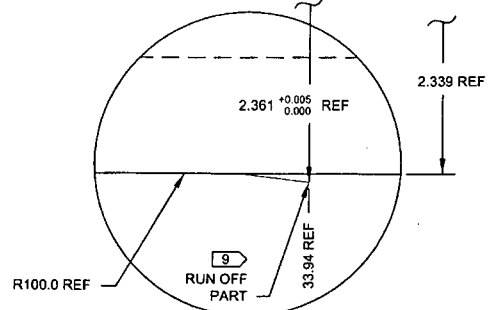
**D350-748-141TRN
TURNING DETAIL**



**DETAIL D:
CROSSTUBE CUFF** C7-4
SCALE 3X



**DETAIL F:
CUFF TRANSITION** A5-4
NOT TO SCALE



**DETAIL E:
TAPER RUN-OFF** C3-4
NOT TO SCALE

RELEASED
2011-01-18

DESIGN	90	DART AEROSPACE LTD
DRAWN	90	HAWKESBURY, ONTARIO, CANADA
CHECKED	13	DRAWING NO. REV. F
MFG. APPR.	13	D350-748-141 SHEET 4 OF 4
APPROVED	13	TITLE SCALE
DE APPR.	13	CROSSTUBE (AS 350/355 HI FWD) NTS
DATE	10.11.23	COPYRIGHT © 2006 BY DART AEROSPACE LTD

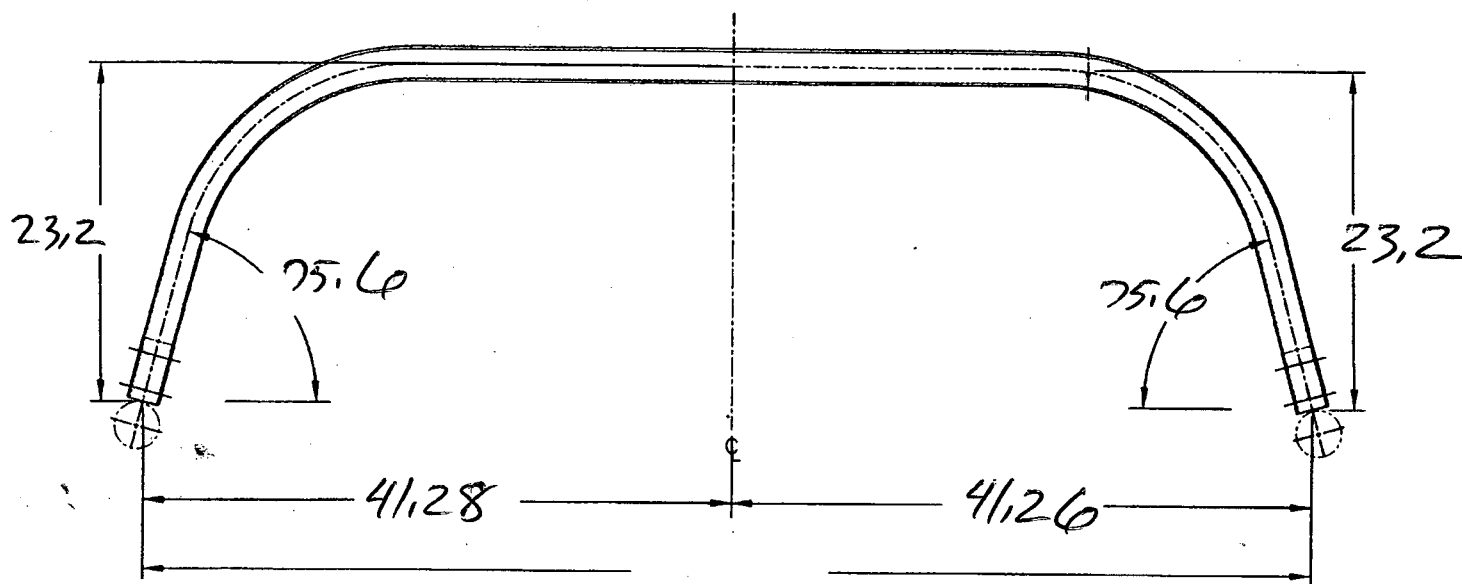
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8 7 6 5 4 3 2 1

Measured Before De-Stress

DART AEROSPACE LTD		Work Order:	900960
Description: Crosstube High Fwd (AS350/355)		Part Number:	D350-748-101
Inspection Dwg: D350-748-141	Rev: F	Page 1 of 1	

Required Dimension	Min	Max
Height	23.12	23.38
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.55	82.05
Bending Passes	7	--
Crushing	--	6%
Twist	--	0.25



	Side A	Side B
Bending Passes	38	38
Crushing		
Comments		
Twist 2.9"		

DD
12-12-18

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	11.11.07	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing & twist dimensions	KJ	<i>AP</i>

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Recu de Livraison

Order	Shipper	Shipping Seq.
182269	1	67436

Shipped Complete

Customer

215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Shipped To:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Purchase Order Number	Customer Shipper No.	Material Type	Order Date	Carrier
PO18651		STEEL	2012/12/19	client

Container Type	# Of Containers	Container Comments
NIL	1	

CERTIFICAT

PACKING

Quantity Shipped: 5

Pounds Shipped: 155,00

Quantity Remaining: 0

Pounds Remaining: 0,00

CERTIFICAT

Quantity Shipped: 5

Pounds Shipped: 155,00

Signature:

Date:

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Recu de Livraison

Order	Shipper	Shipping Seq.
182269	1	67436

Shipped Complete

Customer

215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Shipped To:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Purchase Order Number	Customer Shipper No.	Material Type	Order Date	Carrier
PO 18651		STEEL	2012/12/19	client

Quantity	Part No. / Part Name / Part Description	Pounds
----------	---	--------

5	D350-748-101 CROSSTUBE (1) CROSSTUBE REFERENCE 90046	155,
---	---	------

(1) D350-748-101
CROSSTUBE
REFERENCE: 85566

(1) D350-748-101
CROSSTUBE
REFERENCE 87340

(1) D350-748-101
CROSSTUBE
REFERENCE 91335

(1) D350-748-101
CROSSTUBE
REFERENCE 85567

CONTENANT: 1 NIL

CERTIFICAT

Quantity Shipped: 5

Pounds Shipped: 155,00

Signature:

Date:

Shipped ON: 2012/12/20



REV. 1 Metcor Inc.

560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8
Tél. 450 473-1884
Télécopieur/Fax administration 450 491-5498
Télécopieur/Fax production 450 491-6454

Page 2 / 2

Certificat de Conformité
Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182269	1

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO18651				
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
STRESS REL				
SAE AMS 2759/1 REV.E				

EXIGENCE / requirement SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed RÉSULTATS DE TESTS / results
Visual

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
5	155	D350-748-101 CROSSTUBE (1) CROSSTUBE REFERENCE 90046 (1) D350-748-101 CROSSTUBE REFERENCE: 85566 (1) D350-748-101 CROSSTUBE REFERENCE 87340 (1) D350-748-101 CROSSTUBE REFERENCE 91335 (1) D350-748-101 CROSSTUBE REFERENCE 85587 CONTENANT: 1 NIL



Metcor Inc.

Page 1 / 2

560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8
Tél. 450 473-1884
Télécopieur/Fax administration 450 491-5498
Télécopieur/Fax production 450 491-6454

Certificat de Conformité
Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182269	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

COMMENTAIRES / comments

CERTIFIÉ par / Certified by:

[Signature]



DATE: 2012-12-20

20 Jan

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182269	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

Operation	Temp. spécifiée Specified Temp	Temps de trempe Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
2.00 PREPARING	COMPTAGE									
3.00 STRESS RE	43°C+/-6°C	2:00	air			701				
4.00 FINAL INSP							12-20-2012			12-20-2012

COMMENTAIRES / comments

LES TRAITEMENTS THERMIQUES SUR CETTE COMMANDE A ÉTÉ FAIT EN UTILISANT DES ÉQUIPEMENTS EN CONFORMITÉ AVEC LES REQUIS DE LA SPÉCIFICATION AMS2759.
TOUTES LES OPÉRATIONS DE TRAITEMENT THERMIQUE ONT ÉTÉ FAITES EN CONFORMITÉ AVEC LES REQUIS DE LA SPÉCIFICATION DEMANDÉE ET TOUTES LES VÉRIFICATIONS ET LES TESTS DEMANDÉES ONT ÉTÉ FAITES ET DOCUMENTÉES.
AUCUN CHANGEMENT OU DÉROGATION N'A ÉTÉ FAITE PAR RAPPORT AU TRAITEMENT THERMIQUE DEMANDÉ.
ON CERTIFIE QUE LE MATÉRIEL A ÉTÉ FABRIQUÉ, ÉCHANTILLONNÉ, TESTÉ ET INSPECTÉ EN ACCORD AVEC LES SPÉCIFICATIONS DU MATÉRIEL ET LE BON DE COMMANDE ET LE MATÉRIEL RENCONTRE LES EXIGENCES SPÉCIFIÉS.

ACCOMPLISHED USING HEAT TREATMENT EQUIPMENT THAT MEETS THE REQUIREMENTS OF AMS 2759. ALL THE HEAT TREATMENT OPERATIONS WERE ACCOMPLISHED IN ACCORDANCE WITH THE REQUESTED/REQUIRED HEAT TREATMENT SPECIFICATION AND ALL REQUIRED VERIFICATIONS TEST HAVE BEEN PERFORMED AND DOCUMENTED. NO UNAUTHORIZED CHANGES OR ALL THE HEAT TREATMENT PROCESSING PERFORMED ON THIS ORDER WAS DEVIATIONS TO REQUIRED HEAT TREATMENT SPECIFICATIONS OR PROCEDURES HAVE BEEN PERFORMED.
WE CERTIFY THAT THE MATERIAL WAS MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE MATERIAL SPECIFICATION AND THE PURCHASE ORDER AND WAS FOUND TO MEET THE REQUIREMENTS.

APPROUVÉ par / Approved by:

John Doe



DATE: 2012-12-20

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client./We certify that all the information on this report is exact and in accordance with the order requirements.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO18743**

Purchase Order Date 1/07/13

PO Print Date 1/21/13

Page Number 1 of 3

Order From :

VC-CAD002

CADORATH COATING
2150 LOGAN AVE.
WINNIPEG, MB R2R 0J2
CA

Contact Name

Vendor Phone

Vendor Fax

Vendor Account Nbr

204 633 9420

204 633 8033

Buyer

Requisition Nbr

Tax Resale Nbr

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

Destination-Collect

Ship To :

DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

REVISED

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	85566 ✓	D350-748-101 CROSSTUBE	1/18/13 Yes	✓ 1.00	Day & Ross coll	\$776.2500	\$776.25
		Special insp					
		Stress relief at 375degree for 5hrs Magnetic Particle Inspect per ASTM E1444 Cad Plate per AMS-QQ-P-416B, Class 1, Type 2 Embrittle relief at 375 defree for 8 hrs, Chromate Treat C of C req'd					
2	85567 ✓	D350-748-101 CROSSTUBE	1/18/13 Yes	✓ 1.00	Day & Ross coll	\$776.2500	\$776.25
		Speci					
		Stress relief at 375degree for 5hrs Magnetic Particle Inspect per ASTM E1444 Cad Plate per AMS-QQ-P-416B, Class 1, Type 2 Embrittle relief at 375 defree for 8 hrs, Chromate Treat C of C req'd					

8013-01-28

Change Nbr:

3

Change Date: 1/21/13

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required **YES** NO



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO18743**

Purchase Order Date 1/07/13

PO Print Date 1/21/13

Page Number 2 of 3

Order From :

CADORATH COATING
2150 LOGAN AVE.
WINNIPEG, MB R2R 0J2
CA

VC-CAD002

Contact Name

Vendor Phone

204 633 9420

Vendor Fax

204 633 8033

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

3	87340	D350-748-101 CROSSTUBE	1/18/13	1.00	Day & Ross coll	\$776.2500	\$776.25
---	-------	---------------------------	---------	------	-----------------	------------	----------

Yes

Special Inst:

Stress relief at 375degree for 5hrs
Magnetic Particle Inspect per ASTM E1444
Cad Plate per AMS-QQ-P-416B, Class 1,
Type 2
Embrittle relief at 375 defree for 8 hrs,
Chromate Treat
C of C req'd

4	90046	D350-748-101 CROSSTUBE	1/18/13	1.00	Day & Ross coll	\$1,151.2500	\$1,151.25
---	-------	---------------------------	---------	------	-----------------	--------------	------------

Yes

Special Inst:

Stress relief at 375degree for 5hrs
Magnetic Particle Inspect per ASTM E1444
Cad Plate per AMS-QQ-P-416B, Class 1,
Type 2
Embrittle relief at 375 defree for 8 hrs,
Chromate Treat
C of C req'd
EXTRA CHARGE: MPI INSPECTION

5	91335	D350-748-101 CROSSTUBE	1/18/13	1.00	Day & Ross coll	\$776.2500	\$776.25
---	-------	---------------------------	---------	------	-----------------	------------	----------

Yes

SP 13-01-28

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required - YES NO

Change Nbr: 3

Change Date: 1/21/13



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO18743**

Purchase Order Date 1/07/13

PO Print Date 1/21/13

Page Number 3 of 3

Order From :

VC-CAD002

CADORATH COATING
2150 LOGAN AVE.
WINNIPEG, MB R2R 0J2
CA

Contact Name

Vendor Phone

Vendor Fax

Vendor Account Nbr

204 633 9420

204 633 8033

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

Terms

Currency

FOB

10127-2607

Net 30

CAD

Destination-Collect

Special Inst: Stress relief at 375degree for 5hrs
Magnetic Particle Inspect per ASTM E1444
Cad Plate per AMS-QQ-P-416B, Class 1,
Type 2
Embrittle relief at 375 degree for 8 hrs,
Chromate Treat
C of C req'd

PO Total:

\$4,256.25

5013-01-28

Change Nbr:

3

Change Date: 1/21/13

No substitution or deviation without consent.

Certificate of Conformity or Material
Certification required **YES** NO

Chantal Lavoie

From: Linda Lacelle <llacelle@dartaero.com>
Sent: January 21, 2013 11:47 AM
To: Chantal
Subject: FW: CrossTube P/O 18743 S/N 90046

Could you pls revise PO

From: Patrick Smith [mailto:psmith@dartaero.com]
Sent: January-21-13 11:46 AM
To: llacelle@dartaero.com
Subject: FW: CrossTube P/O 18743 S/N 90046

FYI

From: chris jones [mailto:chris.jones@cadorath.com]
Sent: January-21-13 11:26 AM
To: 'Patrick Smith'
Cc: 'Cisco Lindo'
Subject: RE: CrossTube P/O 18743 S/N 90046

Hi Pat

Sorry I forgot to include in the last email that there will be a charge of \$375 for the work performed so far. We have MPI inspected the part twice and it was run through the plating process. If you have any questions please let Cisco or I know.

Sincerely



**Chris
Jones**

Quality Assurance
Cadorath

Director of

Strength through Diversity

Serving industries that better the world

2070 Logan Avenue
Winnipeg, Manitoba, Canada R2R 0H9

Phone 204.633.2707 **Toll Free** 800.463.7069 **Fax**
204.632.7663 **Cell** 204.800.1190
chris.jones@cadorath.com **www.cadorath.com**

Cadorath News

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From: Patrick Smith [mailto:psmith@dartaero.com]
Sent: January-21-13 8:34 AM
To: chris jones; cisco@cadorath.com
Cc: cprovenca@dartaero.com; Eric Downing; llacelle@dartaero.com; dshepherd@dartaero.com; Mike Petsche
Subject: FW: CrossTube P/O 18743 S/N 90046

Hi Chris,

Our engineering staff has requested the tube returned as is, we will carry out the grinding, inspection and return for Cadmium plating with our next shipment.

Thanks,

Pat

From: Chris Provencal [<mailto:cprovencal@dartaero.com>]
Sent: January-21-13 9:16 AM
To: 'Patrick Smith'; David Shepherd
Cc: 'Eric Downing'; llacelle@dartaero.com; Mike Petsche
Subject: RE: CrossTube P/O 18743 S/N 90046

Pat,

My preference in this case would be to have the tube returned, we grind the tube, then return it to Cadorth in the next shipment. The grinding needs to be done longitudinally, and we won't be able to inspect the surface after CAD plate.

-Chris

From: Patrick Smith [<mailto:psmith@dartaero.com>]
Sent: Monday, January 21, 2013 7:26 AM
To: 'chris jones'
Cc: 'Cisco Lindo'; cprovencal@dartaero.com; Eric Downing; llacelle@dartaero.com
Subject: RE: CrossTube P/O 18743 S/N 90046

Hi Chris,

Go ahead and blend the mark and cadmium plate the tube, please mark the area on the tube once it is ready to ship and we will carry out a wall thickness check upon its arrival.

Thanks for the heads ups.

Regards,

Pat

From: chris jones [<mailto:chris.jones@cadorth.com>]
Sent: January-18-13 4:33 PM
To: 'Patrick Smith'
Cc: 'Cisco Lindo'
Subject: CrossTube P/O 18743 S/N 90046

Good afternoon Pat

We have processed a crosstube on P/O 18743 and after plating we have found what appears to be a crack in the tube at MPI. Our Ndt technician has called out a "axial crack 2" long into parent material on outside of crosstube" Now the concern we have is that under white light inspection it appears to be more of a gauge then a crack but we do not want to attempt to blend it out without your okay. Could you please let us know if there are acceptable blend limits or is there another course of action you would like us to take.

Sincerely



**Chris
Jones**
Quality Assurance
Cadorath

Director of

Strength through Diversity
Serving industries that better the world

2070 Logan Avenue
Winnipeg, Manitoba, Canada R2R 0H9

Phone 204.633.2707 **Toll Free** 800.470.7069 **Fax**
204.632.7663 **Cell** 204.801.4190
chris.jones@cadorath.com **www.cadorath.com**

Cadorath News

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CADORATH GROUP
NON CONFORMANCE REPORT

CADORATH AEROSPACE ☐

CADORATH DISTRIBUTION ☐

CADORATH COATING ☒

UNIFLYTE ☐

NOTE: THIS FORM MUST BE COMPLETED BY: CUSTOMER ☒ VENDOR ☐ BEFORE PROCESSING OF PART(S)

NCR#: **C1125**

CUSTOMER: ☒ **Dart Aerospace**

DATE: **01/22/13**

VENDOR: ☐ **N/A**

PART DESCRIPTION: **Crosstube**

CADORATH/UNIFLYTE P/O #:

N/A

CUSTOMER P/O #: **18743**

CADORATH/UNIFLYTE W/O #:

120852

PART #: **D350-748-101**

SERIAL #: **90046**

QUANTITY: **one (1)**

PURCHASE ORDER INSTRUCTIONS: **CADMIUM PLATE IAW AMS-QQ-P-416C TYPE 2 YELLOW CLASS 2**

DISCREPANCY: **ONE CRACK 2 INCHES IN LENGTH WAS FOUND DURING MPI.**

TRAVIS SZABO

CADORATH/UNIFLYTE INSPECTION DEPARTMENT

CI
22

CUSTOMER: ☒

VENDOR: ☐ PLEASE COMPLETE THIS PORTION, SIGN AND RETURN TOP COPY OF THIS FORM TO CADORATH/UNIFLYTE

DATE: **01/22/13** P/O: **18743**

CUSTOMER INSTRUCTIONS: ☐

ATTENTION: QA-Inspection

VENDOR CORRECTIVE ACTION: ☐

AUTHORIZED SIGNATURE

NAME AND TITLE

DATE: 10/13/10

FORM: OPS 097
REVISION: 3

Packing Slip



Cadorath Coating

2150 Logan Avenue, Winnipeg, Manitoba R2R-0J2

Phone: (204) 633-9420 Fax: (204) 633-8033

INVOICE NUMBER:

S 64236

Net 2% Interest Per Month charged on Overdue Accounts.

Any claims for shortages, overcharges, or damaged goods must be made within seven (7) days from receipt of goods.

Sold To:

Dart Aerospace Ltd.
1270 Aberdeen St.

Hawksbury, ON K6A 1K7

ShipTo:

Customer Order #:	Date Received:	Terms:	G.S.T. #:	Ship Via:	Ship Date:
PO18743	Jan-09-2013	NET 30 DAYS	10071 6547 RT0001		Jan-22-2013

Item #	Qty	P/N & Description	
1	1	EA CROSSTUBE	S/N 85566
		P/N d350-748-101	W/O 120849
2	1	EA CROSSTUBE	S/N 85567
		P/N d350-748-101	W/O 120850
3	1	EA CROSSTUBE	S/N 87340
		P/N d350-748-101	W/O 120851
4	1	EA CROSSTUBE	S/N 91335
		P/N d350-748-101	W/O 120853
5	1	EA CROSSTUBE	S/N 90046
		P/N d350-748-101	W/O 120852

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jan-22-2013

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 120853
INVOICE #: 64236

**CONTRACT OR
PURCHASE ORDER #** PO18743

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 91335

STRIP AND CADMIUM PLATING IAW AMS-QQ-P-416C TYPE 2
YELLOW CLASS 2. MPI IAW ASTM-E-1444. BAKE HEAT CHART # 13-
30, 13-53.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.



Approved Inspector: _____

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jan-22-2013

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 120851

INVOICE #: 64236

**CONTRACT OR
PURCHASE ORDER #** PO18743

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 87340

STRIP AND CADMIUM PLATING IAW AMS-QQ-P-416C TYPE 2
YELLOW CLASS 2. MPI IAW ASTM-E-1444. BAKE HEAT CHART # 13-
30, 13-53.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.

Approved Inspector:



**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jan-22-2013

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 120850
INVOICE #: 64236

**CONTRACT OR
PURCHASE ORDER #** PO18743

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 85567

STRIP AND CADMIUM PLATING IAW AMS-QQ-P-416C TYPE 2
YELLOW CLASS 2. MPI IAW ASTM-E-1444. BAKE HEAT CHART # 13-
30, 13-53.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.



Approved Inspector: _____

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jan-22-2013

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 120849

INVOICE #: 64236

**CONTRACT OR
PURCHASE ORDER #** PO18743

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 85566

STRIP AND CADMIUM PLATING IAW AMS-QQ-P-416C TYPE 2
YELLOW CLASS 2. MPI IAW ASTM-E-1444. BAKE HEAT CHART # 13-
30, 13-53.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.

Approved Inspector: _____



IMPORTANT - PLEASE READ
 ATTENTION FOR MATCHING UP WITH
 OUR DESCRIPTIVE INVOICE THAT
 WILL FOLLOW. THIS IS THE ONLY
 COPY YOU WILL RECEIVE.

IMPORTANT - VEUILLEZ S.V.P. LIRE
 GARDER CETTE COPIE POUR
 VÉRIFICATION AVEC L'ÉTAT DE COMPTE
 DÉTAILLÉ QUI SUIVRA. CECI EST LA SEULE
 COPIE QUE VOUS RECEVREZ.



CUSTOMER'S COPY
COPIE DU CLIENT

NIR R-500048-5

G.S.T./T.P.S.
R119361467

www.dayross.ca

WPG 1745301

OTT
 DEST.

PICK-UP DATE / DE CUEIL	PPD/COLL	INPUT	CODE	RATE	MISC./DIVERS
JAN 22 2013	C	MZC	MZC	IBM	

SHIPPER / EXPÉDITEUR CADORATH PLATING CO LTD 2150 LOGAN AVE WINNIPEG MB R2R 0J2 PH. # 6323336		070854 GENERAL LTL	LEVEL OF SERVICE / NIVEAU DE SERVICE CUSTOMER REF. NO. / N° RÉF. DU CLIENT SPECIAL INSTRUCTIONS / INSTRUCTIONS SPÉCIALES
CONSIGNEE / CONSIGNATAIRE DART AEROSPACE LTD 1270 ABERDEEN STREET HAWKESBURY ON K6A 1K7 PH. # 6323336		038326 BILL TO / FACTURÉ À DART AEROSPACE LTD 1270 ABERDEEN STREET HAWKESBURY ON K6A 1K7	DECLARED VALUE / VALEUR DÉCLARÉE C.O.D. AMOUNT / MONTANT C.R. FUNDS / FONDS C.O.D. / CR. RATE / TAUX METHOD OF PAYMENT / MODE DE PAIEMENT <input type="checkbox"/> CASH / COMPTANT <input type="checkbox"/> ACCOUNT NO. / COMPTE N°: <input type="checkbox"/> VISA <input type="checkbox"/> MC <input type="checkbox"/> AMEX EXPIRY: / DATE D'EXP.: CARD NO. / N° DE CARTE:

ADVANCE CARRIER / NOM DU TRANSPORTEUR PRÉCÉDENT ADVANCE PRO NO. / N° DE FACT. PRÉ. BEYOND CARRIER NAME / TRANSPORTEUR SUBSEQUENT

PIECES / PIÈCES	DESCRIPTION OF ARTICLES & MARKS / DESCRIPTION DES OBJETS ET DE LEURS MARQUES	WEIGHT / POIDS	LB	RATE / TAUX	GROSS AMOUNT / MONTANT BRUT	% DISC. / % ESC.	NET AMOUNT / MONTANT NET
1	ASWT TRFAMT TARIFF PONUM FTAXLT ONHST PC/PLATED PARTS VOLUME WEIGHT IN POUNDS TARIFF AMOUNT 30508Q 18743 FUEL SURCHARGE LTL ONHST/TVH (131) 0001@ 090.00x034.00x034.00 @IN TOTAL CUBIC FEET 60.21		120 602 602 602				243.75
1	TOTAL # OF PIECES						54.60 38.79

ADDITIONAL CHARGES / FRAIS ADDITIONNELS <input type="checkbox"/> HOME DELIVERY / LIVRAISON À MAISON <input type="checkbox"/> EXCESS FLOORS / ÉTAGE EXCÈS <input type="checkbox"/> REDELIVERY / 2-ÈME LIVRAISON	YARD ARRIVAL TIME AT CONSIGNEE 48105	PAYMENT DUE UPON RECEIPT / PAIEMENT SUR RÉCEPTION .000
---	---	---

SEE TERMS AND CONDITIONS ON REVERSE
 NO CLAIMS WILL BE ACCEPTED UNLESS NOTED
 ON CARRIER'S COPY AT TIME OF DELIVERY

VOIR TERMES ET CONDITIONS AU VERSO
 AUCUNE RÉCLAMATION NE SERA ACCEPTÉE À MOINS D'ÊTRE
 INDIQUÉE SUR LA COPIE DU TRANSPORTEUR LORS DE LA LIVRAISON

PROOF OF DELIVERY
PREUVE DE LIVRAISON